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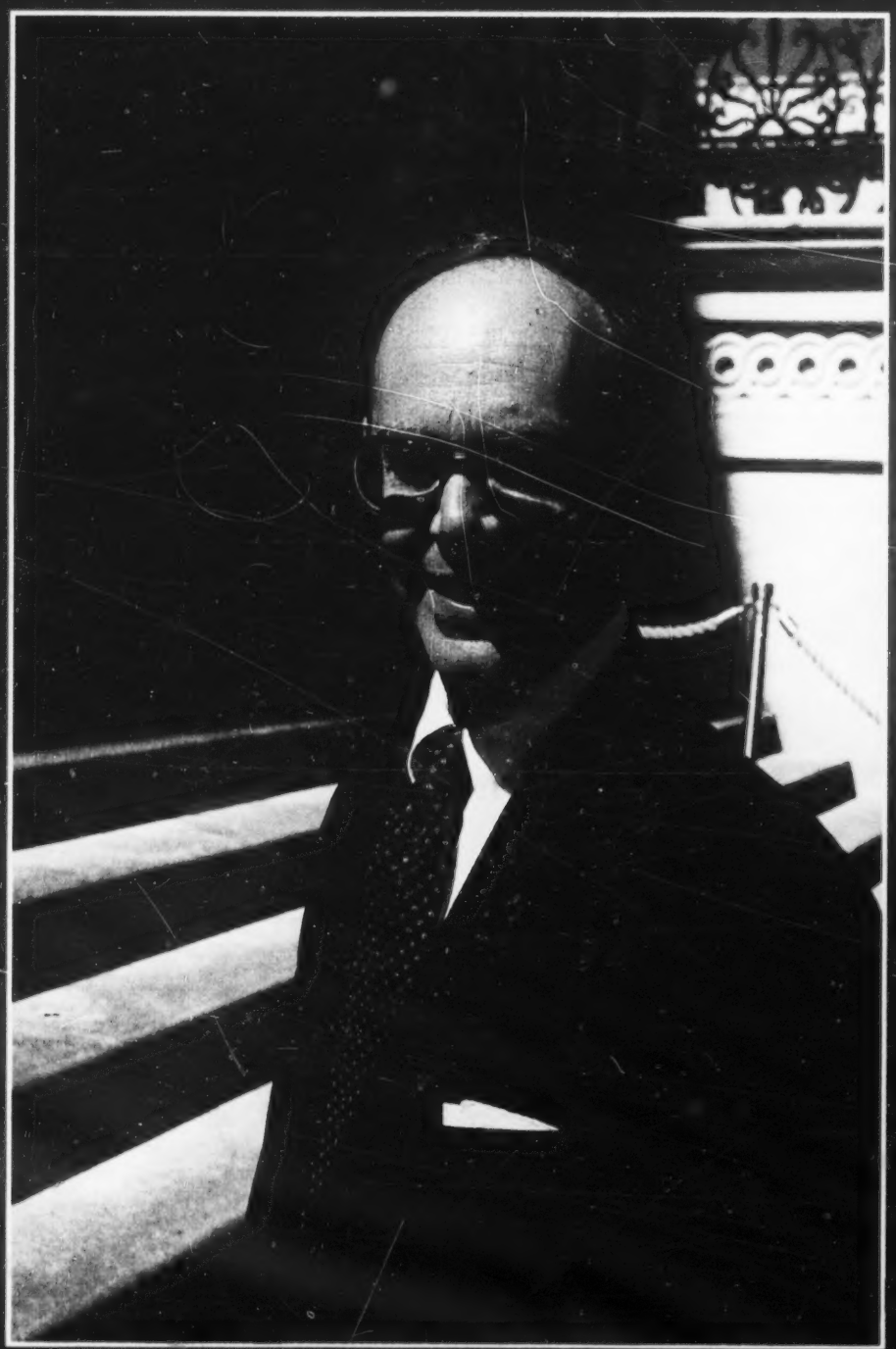

SEARS' CAPITOL CRAFTSMAN

Man of the Year Stan Sender uses all the right tools to keep government intervention in tune with business transactions

VOL. 85, NO. 110

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NOVEMBER 1986

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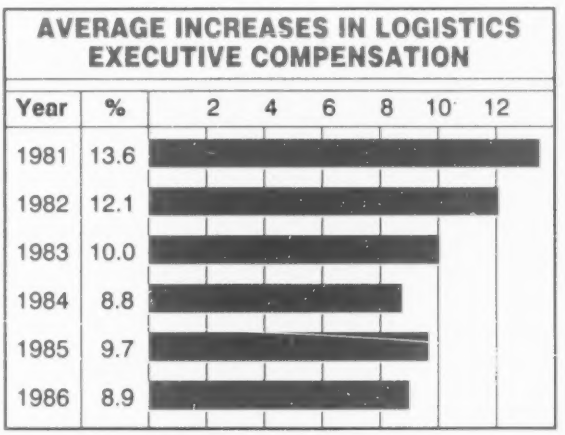

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THE SQUEEZE IS ON!

Surprise, surprise. With only an occasional exception, readers responding to our September Dialogue question—which asked how management responded to the transportation department's 1987 budget proposal—said they were told to hold the line. Even though many said their 1987 line item for freight expenses was decreasing—indicating that transportation/distribution people are successfully cutting their freight costs—a majority said their budgets and head counts will be coming down in 1987. Here's what readers had to say:

"I was told to cut cost to the bone and *justify*. Fuel budgeting during the recent price drop was the hardest item to justify."—**Mac Gough, traffic manager, Fuller Brush Co., Great Bend, Kan.**

"We need to be protected from cutbacks because of the strong bottom-line input we produce."—**Barry Recht, manager of transportation operations, Babcock & Wilcox, Barberton, Oh.**

continued

Compared with '86, my department's 1987 budget will be:	
larger	33%
smaller	42%
the same	25%
Compared with '86, my department's 1987 head count will be:	
larger	25%
smaller	42%
the same	33%
The budget line that was reduced most for '87 was:	
freight bill	44%
administrative	22%
salaries	11%
equipment	11%
The budget line that was increased most for '87 was:	
salaries	39%
computer processing	23%
administrative	15%
equipment	15%
Our '87 budget figures are based on:	
a percentage over last year	50%
sales forecasts	50%

QUESTION OF THE MONTH

FORGING A PARTNERSHIP?

Many progressive companies claim to have entered a new era of transportation purchasing. They are forging "strategic alliances" with their carriers, they say, where the needs of both shipper and carrier are considered equally.

A study conducted by the Council of Logistics Management contends that forming such "win/win" links with carriers is a primary factor in achieving logistics excellence. In such a partnership, it's stressed, both sides negotiate with an "open book" policy. Expectations concerning performance, price, and freight commitment are clearly drawn.

Who benefits most from these partnerships? The huge companies with lots of volume, and therefore lots of leverage? Or can smaller shippers negotiate equally effective alliances with their carriers?

Beyond that, what are the real differences between "strategic alliances" and good old-fashioned, good-faith negotiation? Is this just a fancy new name for a common-sense concept and a common business practice?

Please give us your reaction to the newfound popularity of "strategic alliances" on the card below.

DIALOGUE November 1986

- The "strategic alliance" concept _____does/_____does not appear to be something new in transportation procurement.
- I _____agree/_____disagree that forging strategic alliances with a **smaller** number of carriers is the best way to ensure dependable, quality service.
- I _____agree/_____disagree that strategic alliances are a more viable concept for companies with large freight bills ($100 million and up) than for smaller shippers and receivers.
- The advantages of strategic transportation alliances would appear to be (number by importance): _____predictable service; _____long-term cost stability; _____simplicity of carrier management; _____freedom to concentrate on other aspects of logistics management; _____other (explain: _____)
- The drawbacks of strategic transportation alliances would appear to be (number by importance): _____lack of exclusivity and confidentiality; _____excessive time required for ongoing education of and about carriers; _____financial uncertainty within for-hire transportation sector; _____inflexibility to try out new vendors and services; other (explain: _____)

In my opinion, the difference between "strategic alliances" and traditional shipper/carrier relationships is:

NAME (print) TITLE

COMPANY PHONE

ADDRESS

CITY STATE ZIP

FIGURES IN SPEECH

(Quotes from transportation and distribution notables that have caught the ears of *DISTRIBUTION* editors:)

"All of this talk of strategic alliances between shippers and carriers is great, but I can't help but be reminded of the coin toss before a football game. Both sides meet in the middle of the field and shake hands. Then a few minutes later they're on opposite sides again, trying to bash each other's brains out." **– C.W. Allen, president, ARA Trailblazer Inc., Carrollton, TX.**

•

"I must tell you what an honor it is to be the first of 350 speakers." **– John Houseman, kicking off CLM's 1986 conference.**

•

"Many (ocean) carriers say that service contracts helped bring about the current deterioration in freight rates. That's just plain wrong. Overcapacity is the cause. We see the only major defect of service contracts being the lack of total confidentiality regarding prices. This is what gives carriers the chance to drive rates lower and lower. Section 18 of the Shipping Act should be amended to allow total confidentiality of rates under a service contract agreement." **– Clifford Sayre, director, logistics, DuPont & Co.**

"Management argues that good programs are already in place – but administrative costs need to be cut." **– John P. Teschel, traffic manager, Morton Co., Akron, Oh.**

"We *must* remain flat for 1987." **– G. Bolduc, assistant director of traffic, Cigna Service Co., Bloomfield, Conn.**

"Management told me that the budget must 'fall into line with manpower reductions.' " **– Ed Kupa, senior manager of physical distribution, Wang Labs, Tewksbury, Mass.**

"I am required to show what my productivity increases will be. Management told me to reduce the percentage of cost to sales." **– H. Nichols, distribution services manager, R. R. Donnelley & Sons, Warsaw, Ind.**

"The message I heard was, 'Give me a flat budget this year – period!' " **– P. Eichfeld, III, shipping supervisor, Cigna, Philadelphia.**

"The increase in freight costs was fully understood, especially after securing savings in warehousing costs in excess of 18 percent." **– Jack Deckert, general traffic manager, W. A. Taylor & Co., Miami.**

"Because we were 25 percent under budget for 1986, it was difficult to obtain the increases I deemed necessary to maintain our growth rate of 30 to 45 percent yearly." **– Stephen Misovic, director of distribution, Laura Ashley, Inc., Mahwah, N.J.**

"This is the first year we formally prepared and submitted a budget. When management saw what we were asking, the response was, 'Good Lord, we didn't realize your department's expenses were so large. You must be empire building.' " **– Steve A. Meutzer, traffic manager, Applied Biosystems, Inc. , Foster City, La.**

DISTRIBUTION COST TRENDS

	1986 Change in % of sales	1985 $/cwt
Finished goods transportation	– 6.3	–1.6
Warehousing	–10.6	–6.3
Order processing/customer service	+ 4.6	–0.3
Distribution administration	+ 0.3	+3.5
Inventory carrying cost @ 18%	– 3.8	+0.3

Source: Herbert W. Davis & Co.

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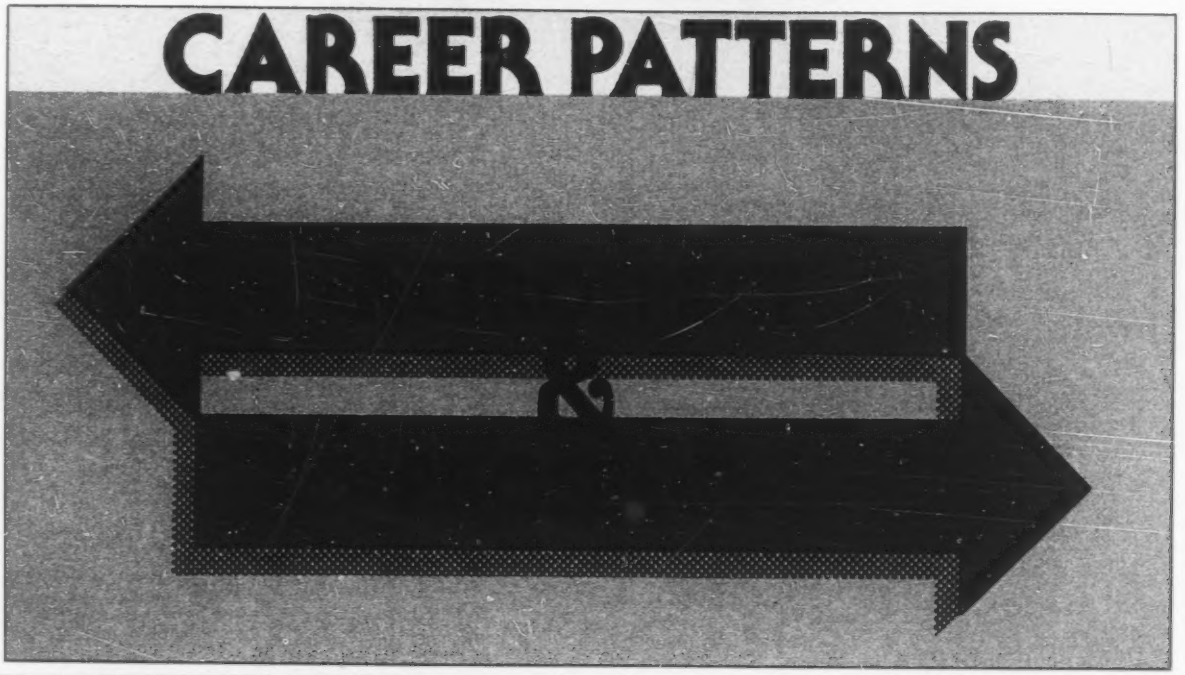
CAREER PATTERNS



The journey's half over, but the rocketship ride to the outer limits of logistics change and innovation is just now gathering thrust.

By Bernard J. LaLonde, Ph.D

Covering 30 years in the evolution of logistics is indeed a challenging task—particularly when we haven't yet completed the 30-year period we want to study. In fact, we're only halfway there.

For this year's report, I've reviewed the results of the last 15 years of our OSU Career Patterns study, searching for commonalities or central themes in the data base. Then I've looked over the input our respondents provided about the prospects for the *next* 15 years, through the year 2000.

Another challenge has been thinking creatively about the format of this year's report. I considered a range of different approaches and decided that the most productive and effective approach would be to structure my thoughts around a series of six propositions. To me, a proposition is a statement I believe to be true and is supported by all of the evidence I have reviewed, but that I cannot prove in a scientific or statistical sense.

Before we get on with my propositions, though, the academician in me says I ought to make some brief observations about the limitations of the data and the analysis. Each year when we take our survey, we send out a questionnaire to a selected list of distribution and logistics executives. In analyzing trends from 1972 through 1986, we are making an assumption that the respondent base (the people who send questionnaires back to us) is the same each year. We believe the sample base is relatively homogeneous and that this is a reasonably safe assumption. But we should be cautious about interpretation.

We should also be cautious about assuming that we are dealing with a "representative" sample. We send the questionnaire out to people who we believe are on the cutting edge of what is happening in the distribution/logistics area. It is not "representative" of all businesses, but rather of those businesses which are innovative in our functional field. Of the many hundreds of thousands of businesses in the U.S., a fair number have never heard of logistics, nor do they have executives with the term "logistics" or "distribution" in their job titles. The information we are looking at reflects what forward-thinking, logistically-oriented companies have done over the past

continued

ABOUT THE AUTHOR

Dr. Bernard J. LaLonde is Mason Professor of Transportation and Logistics at the Ohio State University (OSU) in Columbus. Dr. LaLonde joined the OSU faculty in 1969 and began the OSU Career Patterns study in 1972. The study is presented each year at the Council of Logistics Management (CLM) annual conference and then published in the November issue of DISTRIBUTION. The text we are publishing this year includes some extemporaneous remarks Dr. LaLonde made while presenting his findings to last month's CLM conference in Anaheim, Calif.

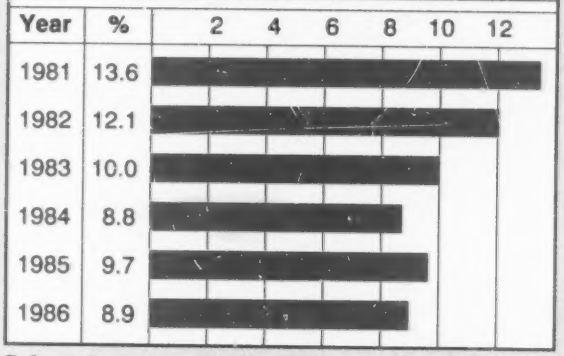
AVERAGE SALARY LEVELS OF TOP QUARTILE– LOGISTICS MANAGERS, DIRECTORS, AND VICE PRESIDENTS

Year	Manager	Director	Vice Pres.
1972	$35,400*	$37,500*	$45,000*
1976	35,500	49,100	74,750
1981	61,300	77,000	118,300
1986	N.A.	104,600	165,800

**estimated*

Managers are no longer included in the database; there are now enough executive titles to carry the impressive salary standard.

AVERAGE INCREASES IN LOGISTICS EXECUTIVE COMPENSATION



Salary increases have well outpaced inflation, marking a corporate repositioning that's taken a permanent hold.

15 years, and will do over the next 15.

This year we sent the questionnaire out to 419 distribution/logistics executives. This target population included directors and vice presidents. We opted not to include manager-level executives because of the special nature of this year's questionnaire. Our response to this year's mailing was around 20 percent, which was somewhat lower than in the past. We speculate that this lower response was due to the difficulty of responding to some of this year's questions.

Of the responses we did get back, we feel we have a good balance of industries represented, although we're a little overweight in data from the food industry. But it's reasonably well-balanced. Again, we want to stress that we're not trying to take a cross-sample, but instead are trying to find the good thinkers who are on the cutting edge. With that in mind, I can say I have a real good feeling about the data's face validity—it makes good sense.

THEMES FROM THE PAST

Proposition No. 1: There has been a significant corporate repositioning of the distribution/logistics function over the past 15 years.

In 1972, the preponderant title for those individuals managing the distribution function was "manager." Today, it is just as common to find a distribution vice president, with a six-figure income and the perks and power that go along with that senior executive position.

In our surveys of the early 1970s, 70 to 80 percent of the sample were distribution managers, with a handful of distribution directors and vice presidents. In the 1986 survey, we were able to identify over 400 distribution vice presidents and directors.

We puzzled over how to present the statistical evidence of this repositioning. Perhaps the most convincing evidence is the average salary levels for the top quartile of the logistics executives (see table at top left, above).

Salary level is a reasonably accurate surrogate measure for power and positioning in the corporate structure. When we examine the historical evidence, we find that the salary of the logistics vice president has increased four-fold over the past 15 years, from $45,000 per year to $165,000 per year, and that the salary of the logistics director has increased three-fold, from $37,500 to $104,000. It should be noted that during this same period, the Consumer Price Index increased approximately two and a half times.

To reinforce this notion, we looked at average salary increases for logistics executives and found they have been averaging 9 to 12 percent per year (see chart at top right, above). In just the past year, the average salary increase was 8.9 percent, versus an inflation rate of around 4 percent. The gap is significant, and the "stability of change" over time further assures us we aren't dealing with a phenomenon that's a flash in the pan.

Another important shift in the positioning of the logistics function has occurred over the past three or four years, when there has been an integration of the materials flow movement in a significant subsegment of the sample population. This usually takes the form of organizationally combining one or more of the functions which are not traditionally viewed as integrated in the material flow chain.

For example, we have seen a growing number of firms include the purchasing/procurement function, or the forecasting function, or even some aspects of the information systems function into a more generalized material flow organizational model. This shift could signal a dramatic change in organizational integration over the next decade.

Proposition No. 2: The functional responsibility of the distribution/logistics executive has broadened significantly over the past 15 years.

It is obvious that the distribution/logistics executive of 1986 has a considerably broader base than the distribution/logistics executive of 1972. This base has broadened in at least two important ways.

continued

First, the functional activities grouped under the logistics function have expanded dramatically. This conclusion is consistent with the repositioning proposition; as logistics becomes positioned higher in the firm, it encompasses a wider range of activities.

In 1972, the basic activities of the firm were concentrated on transportation and warehousing, and very little time was spent at the interface with other major corporate functions such as marketing, production, finance, and data processing. In a short decade and a half, this environment has evolved dramatically. Many vice president-level logistics executives now spend a third to one-half of their time developing policy and defining relationships between other major corporate functions, and they spend less than one-fifth of their time in the traditional transportation and warehousing areas. More and more of the typical executive's time is spent seeking consensus and coordination for logistical programs which span internal corporate functions—marketing and finance, for example—and also bridging the barriers between the corporation and external customers, vendors, and third-parties.

Similarly, a range of new functions, many of them technology-intensive, has put new demands on the typical distribution/logistics executive. Some of these demands have entailed new task environments (procurement, international) and some have involved rapidly changing technology (order entry/processing). It's interesting that in our first survey in 1972, only 14 percent of our respondents listed order entry/processing as a functional responsibility; this year, 52 percent said it came under their purview. And in 1972, procurement didn't even exist as a possibility on our questionnaire; this year, it applied to 44 percent of those we surveyed.

In a short 15 years, then, logistics has become a great deal more than "kicking boxes." Significant new demands have been made on the time, talent, knowledge, and energy of logistics executives. This type of boundary-spanning management requires negotiation skills, planning skills, and an entirely different "mind set."

Proposition No. 3: The demographics of the distribution/logistics manager have undergone shifts in the past 15 years.

When we started the Career Patterns study back in the early 1970s, we found that we were dealing with a well-educated, relatively young population with a diverse educational background. When we searched for trends in the data, we found that the 1986 executive was a little younger still, had more formal education, was more involved in international dimensions, and probably was more broadly trained and educated than any predecessor. However, most of these changes were modest in direction, and did not represent major shifts in the demographics of the logistics executive. But our respondents do seem to now be reaching executive status earlier in their career cycles.

The box on page 48 provides some insight into current educational trends in logistics. Among our other findings in this area were that the average age of a distribution/logistics director and the distribution/logistics vice president dropped in the early half of the 1980s. We also found that the post-1980 distribution executive is more involved in the international aspects of the firm's business and is more likely to travel internationally on corporate business.

Another significant demographic change of the past few years has involved the number of women entering the logistics career arena. In 1972 there would have been no need to inquire as to the gender of the logistics executives in our Career Patterns survey. While the proportion of female chief logistics executives is still very small, its growth is on a steep

continued

PROJECTED CHANGE IN TOTAL LOGISTICS COSTS
1987 over 1986

% Increase or Decrease	% of Respondents
Over 8% increase	9.5%
8%	4 8%
7%	2.4%
6%	2.4%
5%	14.2%
4%	9.5%
3%	11.9%
2%	4.8%
1%	2.4%
0%	11.9%
Decrease over 1986	26.2%
Average change	+1.6%

Respondents were surprisingly confident about the outlook for lowering overall costs next year.

ANTICIPATED CHANGES IN ELEMENTS OF LOGISTICS COSTS
1987 over 1986

Cost Component	Average Change
Rail	2.5%
Motor – LTL	2.4%
Motor – TL	1.4%
Private warehousing	2.9%
Public warehousing	3.3%
Fuel – gasoline	1.5%
Fuel – diesel	0.3%
Inventory carrying	1.1%

Modest increases are projected for the costs of key services, and for the price of money.

incline. At the Ohio State University, approximately one-third of our student enrollment in the logistics curriculum is female—and these women are among our best and brightest.

Proposition No. 4: The current focus of the logistics-distribution executive is significantly different from the focus of his/her counterpart 15 years ago.

As part of our survey this year, we asked for some open-ended comments and received a number that we thought suggested a typical point of view.

For example, one respondent noted that "total integration of the pipeline—from manufacturing to dealer/distributor to customer—to effect the lowest total cost will be mandatory in highly competitive, slow-growth industries. Competitors will continue to be aggressive for share, with resultant price pressures and the need to protect margins."

Another survey respondent noted that "the information explosion will generate a more centralized management approach."

Since one of the major preoccupations of many logistics managers is costs, we put cost questions in this year's Career Patterns survey and asked the respondents to forecast the level of increase for their logistics costs in 1987 over 1986 (see table at bottom left, page 40).

It was a little bit of a surprise that one out of four respondents projected costs going down in 1987 versus 1986. In total, almost four out of 10 said they would either hold the line or reduce costs to make the total cost of laying the product down in front of the customer less this year than last. The average anticipated change in logistics costs for next year was an increase of 1.6 percent.

We then asked about some selected components of logistics costs and found that, consistent with the general conclusion on costs, increases of modest proportion were projected (see table at bottom right, page 40).

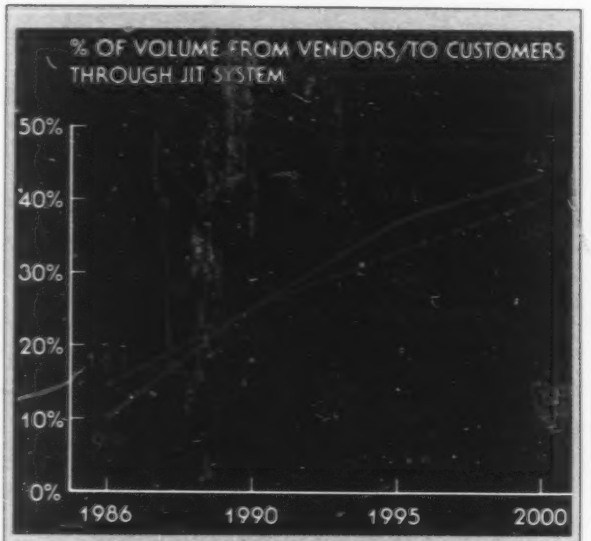
Concern with cost pressures shifted from an emphasis on taking down transportation and warehousing costs to a more strategic concern focused on providing the firm with an opportunity to be a low-cost vendor on the street, through effective logistics design. Similar shifts into a more strategic type of format were observed in both the customer service area and the inventory management area.

Then we asked the respondents to identify the major factors which will influence the growth and development of the corporate logistics function during the next decade.

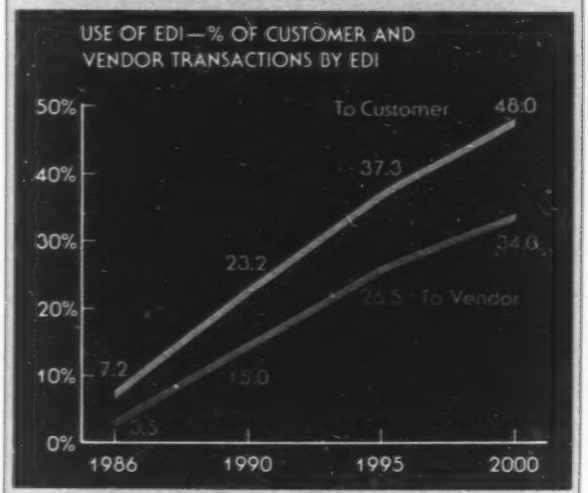
The questions of logistics integration, or of the integration of information systems to drive logistics systems, were not even mentioned in 1976 and in 1981. Yet in 1986 these items represented almost a quarter of the responses.

Similarly, computer development/cost was not mentioned in the 1976 and 1981 surveys, but represented 11 percent of the responses in 1986.

In short, the logistics executive of 1986 thinks about the logistics environment differently than his/her counterpart did in 1972. Cost performance has become a more strategic question, and the all-pervasive impact of technology is easily identified in the responses.



How to deal with fewer distribution locations and faster inventory turnover at the locations that remain? One answer is JIT...



...and a second answer is Electronic Data Interchange, which is expected to catch on in triplicate in the next four years alone.

THOUGHTS FOR THE FUTURE

Proposition No. 5: One of the primary accountabilities of the logistics executive over the next 15 years will be for effective and efficient management of change.

To this point, we have painted a picture of the changing environment of the logistics executive. The traditional concern with costs and the traditional activity focus has broken down, and the executive's concern is more clearly identified as a strategic one. Further, the function has been repositioned in many firms where the executive has active input into senior executive councils on issues of strategy and policy; logisticians are finally privy to senior manage-

continued

ment and policy on an ongoing basis. The remaining question is one of future focus and direction.

To build on the base of the last 15 years and project the direction and scope of change over the next 15 years, we asked for an indication of how many warehouses were currently being used by each of the respondents' companies. The data (see table at top right, page 46) suggest that a typical company now has about nine of its own warehouses, divided between plant sites and field locations. About 75 percent of the sample also use public warehouses; of that 75 percent, each respondent makes use of about eight additional public warehouse locations, positioned primarily for field distribution rather than manufacturing. About 25 percent of the sample use contract warehousing, and they use approximately three contract warehouses, again primarily positioned as field distribution locations.

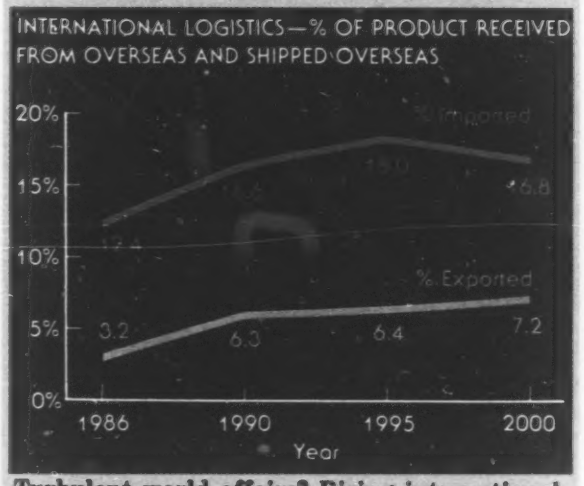
Starting with this baseline, we asked about future directions in terms of the number of inventory deployment locations. What we found is that the number of corporate warehouses is expected to drop about 25 percent between now and 1990, and then stabilize at that new number. The average would drop from nine warehouses to seven warehouses. There would be a similar but more gradual drop in the public warehouse units, and the number of contract warehouses would be relatively stable. One respondent explained that "consolidation of warehouses into larger central ones in metropolitan areas such as Los Angeles, Dallas, San Francisco, the Midwest" was a trend for the future. Another said that "the trend will be to fewer and larger DCs, to optimize labor-occupancy cost." In both cases, a productivity-scale type of argument is being made.

The flip side of this question focuses on how to design logistics systems in light of the move to fewer inventory locations and higher customer demands. We asked a question about projected inventory turnover and found some interesting results (see table at bottom right, page 46). Our respondents estimated that over the next 15 years, there will be significant increases in inventory turn rates at both plant and field locations—from 35 to 45 percent, in fact, with over 15 percent of the increase coming by 1990.

One response to lower inventory without lower customer service is more widespread utilization of just-in-time (JIT) inventory methods. The chart at top right on page 42 indicates respondents' estimates of the percent of volume they plan to receive from vendors—and send to customers—utilizing a just-in-time system. Customer flow volume is expected to increase from 14 to 25 percent over the next four years, and vendor volume from 10 to 25 percent. By the year 2000, respondents felt, almost 40 percent of the inventory moving through the channel would be driven by some type of just-in-time system.

A second answer might be in the types of information systems our respondents perceive for the future. As the second chart on page 42 shows, those surveyed estimate a tripling of electronic data interchange (EDI) transactions in the period 1986-1990. Likewise, the percentage of vendor transactions driven by EDI systems will increase from 3.5 percent today to 15 percent by 1990. Over the next 15 years, it is projected that EDI/vendor transactions will increase tenfold, and that EDI transactions will represent almost half of all customer transactions.

You don't have to read between the lines to see how dominant bar coding will become by the end of the century.



Turbulent world affairs? Rising international tensions? Not where logistics is concerned; stability is the long-range forecast.

It also would appear that the bar coding revolution is well upon us (see chart at top right, above). Our sample reported that around 20 percent of outbound shipments are now bar coded. By 1990 it is anticipated that this percentage will nearly triple, and by the year 2000 our sampling expects to see 85 percent of all outbound shipments carry some kind of bar code. Data on inbound shipments are not quite as dramatic, but are nonetheless impressive. Inbound shipments will go from the present 8 percent to 39 percent bar coded in 1990, and by the year 2000, 62 percent of all inbound shipments will be bar coded.

When we asked the respondents about international involvement and future directions for international product flow (see chart at bottom right,

continued

p. 44), we discovered that the percentage of goods imported will rise from around a current 12 percent to almost 17 percent in 1990. At that point, imports are expected to stabilize. On the other hand, exports will double, from a current 3 percent to about 6 percent in 1990. Exports will then gradually edge up to over 7 percent of product flow.

Recognizing that transportation deregulation has caused some substantial changes in the way buyers and sellers of transportation services interact, we included a question on contract rates (see middle chart on right). Our respondents report that almost 50 percent of their current volume moves under contract rates. They expect a gradual increase in the percentage of their volume moving under contract, to almost two-thirds by the year 2000.

One cannot view the future without an overwhelming sense of an increase in the pace of change. As one of our respondents summed up: "Constant change (will be required) to remain competitive. Standing still will (mean) sliding backwards."

Proposition No. 5 states that what might separate the good managers from the not-so-good ones over the next decade and a half will not be how they manage warehouses or transportation fleets or computers, but how they manage change in an efficient and effective way. The real challenge will be in migrating change into the firm without the dysfunctional consequences of sudden shifts in processes or technology that usually occur.

Proposition No. 6: A key factor in managerial success for the logistics executive will be his/her ability to position the logistics function as a significant driver in the strategic success of the business.

It is difficult, if not impossible, to generalize about the logistics process in such a way that it would characterize every individual company or industry. Businesses are very much like individuals in their response to change. Some seek innovation, others reject it. Some have a high tolerance for risk, others are risk-averse.

However, there are some guideposts which offer broad parameters in interpreting the evolution of the logistics concept. These guideposts suggest a four-stage evolutionary process for the logistics concept (see table on page 48). They reflect how companies deal with logistics change, and show the functional stages that companies typically go through as they implement change.

In the first stage, which we have termed "Functional," the focus is on integrating direct distribution activities such as transportation and warehousing. In this stage, the primary metric, or measurement device, is the cost of performing that activity. In our view, this was the dominant focus from the mid-1960s until the mid-1970s.

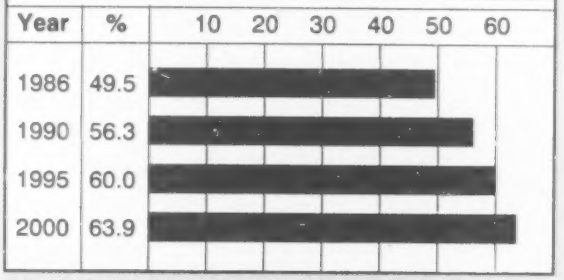
The next stage in the process is "Information Integration." In this stage, activity (warehousing, transportation) and information are both viewed as part of the logistics process. In terms of function, customer service or a downstream channel focus provides the primary function, with the metric logically becoming system response time to customer service requirements. This stage was a dominant theme from the mid-1970s until early in the decade of the 1980s.

PROJECTED NUMBER OF DISTRIBUTION CENTERS BY TYPE OF LOCATION (Units)

Year	Corporate DC	Public Warehouse	Contract Warehouse
1986	8.8	7.6	2.8
1990	6.8	7.2	2.5
1995	6.6	6.7	2.5
2000	6.6	6.4	2.8

The push for productivity and reduction of labor and occupancy costs has all but wiped out double-digit warehouse networks.

CONTRACT TRANSPORTATION – % OF FREIGHT VOLUME MOVING UNDER CONTRACT RATES



The passionate rush has subsided; now shippers and carriers are settling in with contracts as a way of life.

PROJECTED INVENTORY TURNOVER BY PLANT LOCATION AND FIELD WAREHOUSE LOCATION

Year	Plant	Field Warehouse
1986	8.3X	7.2X
1990	9.5X	8.8X
1995	10.6X	9.7X
2000	11.2X	10.5X

For every item in the logistics pipeline, there are now many compelling reasons why it should turn, turn, turn.

The third stage in the process is where many firms currently find themselves. This stage, which might be termed "Interfunctional Integration," requires a managerial integration between major corporate functions such as production, marketing, finance, and logistics. The perspective resulting from this is

continued

EVOLUTION OF THE LOGISTICS CONCEPT			
1970	1980	1990	2000
STAGE:			
Functional	Information	Integration	Strategic
FUNCTIONALITY:			
Trans/whse	Customer service	Inter/Intra functional	Globalization
DRIVER:			
Activity	Information	Trade-off	Profit
METRIC:			
Cost	Resp[illegible]	Marginal efficiency	Risk Strategy

Many firms have already made it to the integrated stage of logistics management; only a select few have moved into the strategic realm.

one of total material flow integration, where tradeoffs are fully visible to senior management and decisions are made in accordance with the marginal efficiency or marginal contribution of the individual functions *vis a vis* the overall objectives of the firm. This stage will probably be dominant throughout the 1980s and into the 1990s for many firms.

The final stage, and the one that is probably most speculative due to its longer-term implementation horizon, is "Strategic Integration." Here, logistics becomes a cornerstone to the strategic thrust of the firm. It is global in that it spans both geographic and ownership boundaries. It shifts from a cost center to an important source of profitability for the firm, and performance is measured in terms of risk rather than in terms of cost.

BULGING WITH CHANGE

A consistent pattern of change began to emerge in the mid-1970s—one that suggests logistics has been moving from an activity-driven function to a strategy-driven function. The evidence suggests that the direction of change will be maintained over the next decade and a half, and that the velocity of change will increase. More companies will move through the evolutionary stages at a stepped-up pace.

"Logistics will play a major role in corporate strategic planning," noted one respondent. Added another: "Supply chain management will become more popular as groups of companies manage resources as partners—from source to user. They will take JIT beyond its current concept and put great emphasis on EDI and on developing trust-based partnerships with customers and vendors."

It has been said that "profit is the payment you get when you take advantage of change." In logistics today, we can take that a step further to add that "change is the name of the game when you look to commit to quality." If you think the last 10 years have been exciting, you ain't seen nothing yet. ★

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NEW COURSES TO SUCCESS

One always interesting part of the Career Patterns study is respondents' replies to the question: "If you were offered the opportunity to return to school this fall for three months and could design the curriculum yourself, what subjects would you study?"

Until the early 1980s, the dominant response was "finance." Typically, three or four out of 10 respondents would list finance as their first choice.

In the past several years, though, there have been some significant shifts (see table below). Six out of 10 respondents now say they would design a curriculum which would include either computers/modeling, strategic planning, or marketing as a first choice. In 1981, only 3 out of 10 respondents would have made the same decision.

The survey also asks for insight into educational background. It's now a given that logistics is a field requiring a high degree of schooling. Based on this year's returns, there is now a greater than 90 percent chance that the logistics executive will be a college graduate, and more than a 40 percent chance that the executive will have a graduate degree. That represents a 50 percent increase over 1972 in the case of the graduate degree, and about a 10 percent increase at the undergraduate level.

While practitioners at the top level of the field are repositioning themselves educationally, those just coming out of school with a logistics or transportation degree will be glad to hear that their field has been officially designated as a "hot" one in academic circles. This summer, no less a source than the *New York Times* News Service circulated a report—which was picked up by major newspapers across the country—proclaiming that "logistics offers some interesting job possibilities." The report used comments from OSU's Bud LaLonde and from Paul Zinszer, professor of transportation at Syracuse University, to illustrate how corporate America is discovering logistics as a ticket to significant cost reductions.

A current shortage of logistics majors, Zinszer reported, has pushed entry-level salaries up as high as $30,000 for undergraduates, and $38,500 for those with master's degrees. More colleges are starting up logistics programs than dropping them, he added. Bud LaLonde confirmed the trend: "Yes, we have people beating on our doors for logistics majors," he said. "There is more action than ever before, building on the previous upward trend. There is a dearth of good professors as well."

—Joe Barks

EDUCATIONAL NEEDS				
Response (first choice)	Year (%)			
	1972	1976	1981	1986
Finance	16	32	38	17
Computers/ modeling	4	11	11	27
Strategic planning	4	13	16	23
Marketing	5	4	5	11

Logistics managers aren't buying the idea that finance is the ticket anymore. They're plugging into new paths now.